



# PHILIPS

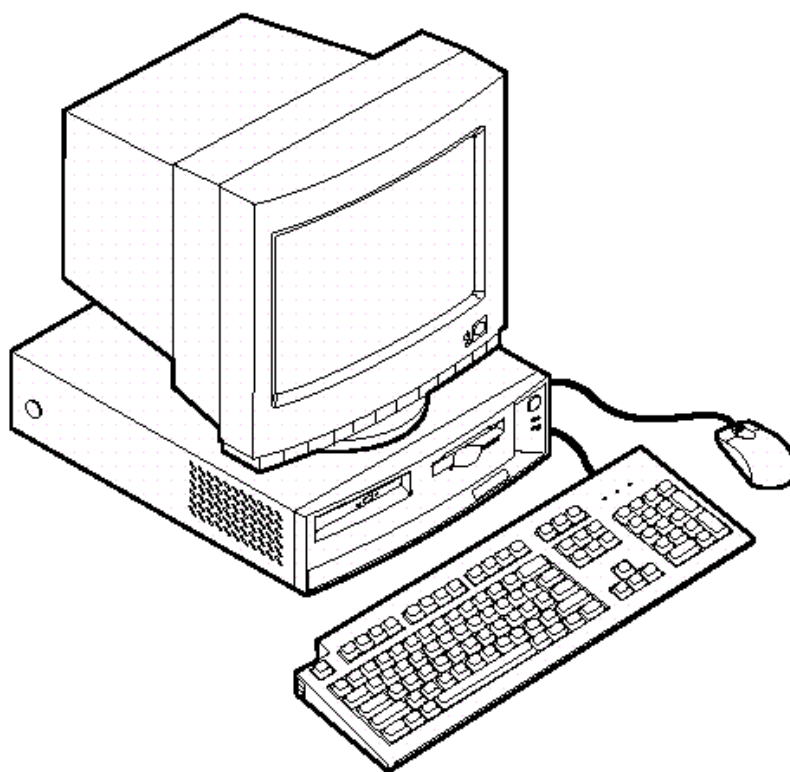
**Philips Medical Systems DMC GmbH**

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**SERVICE MANUAL  
732  
UNIT**

## **PCR Preview Unit/ PCR Console**

**4512 201 01392**



DMC Hamburg

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**SERVICE MANUAL - UNIT**

**PCR Preview Unit/ Console Compano S**  
**4512 201 01392**

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In case there are any questions concerning this manual,  
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## 1. Introduction and Technical Data

### 1.1. General Use

This manual covers a PC which is used for the following PCR systems:

- Preview Unit of the PCR Compano system
- Console of the PCR Compano S system.

#### Functionality of the Preview Unit:

- Reader control
- Preprocessing of the images (EDR)
- Image data compression
- Preview of the images
- Temporary storage of images
- DICOM output to EasyVision RAD

#### Functionality of the Console Compano S:

- Reader control
- Image processing
- Image data compression
- Preview of the images
- Direct patient data input
- DICOM/ WLM RIS interface
- DICOM output to printer

### 1.2. Technical Data

#### Type:

IBM NetVista M41, model 6790 11U

#### Dimensions:

104 mm x 360 mm x 412 mm (H x W x D)

approx. 10 kg

#### Environment:

Air temperature:

- System on: 10° ... 35° C
- Sytem off: 10° ... 43° C

Humidity:

8 ... 80 %

#### Electrical Input:

Switchable range: 115V and 230V

Low range (115V):

90 ... 137 V ac

## PCR Compano PC

57 ... 63 Hz

High range (230V):

130 ... 265 V ac

47 ... 53 Hz

0.08 ... 0.30 kVA

### Heat output:

257 ... 686 Btu/hr

### Acoustical noise-emission:

38 ... 43 dBA

### Features:

- Intel® Pentium™ 4 processor, 1500/133 MHz
- 512 MB system memory
- IDE CD-ROM drive
- 3.5" 1.44MB diskette drive
- 3.5" hard disk drive, > 20GB
- IBM 10/100Mbps Ethernet subsystem

### Operating system:

Windows 2000®

## 1.3. Compatibility

PCR Compano Reader	4512 201 0100x
PCR User Terminal	9897 010 0045x
PCR Additional User Terminal	9897 010 0053x
EasyVision Ultra 10	9896 050 0295x
EasyVision Ultra 60	9896 050 0296x

## 1.4. Scope of Delivery

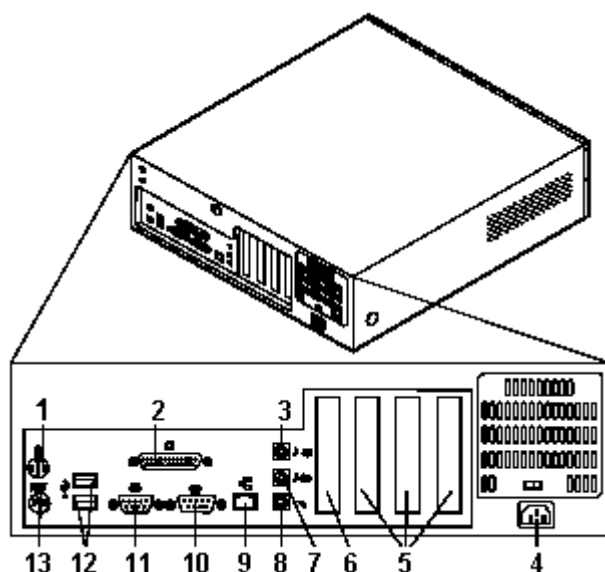
- |                                     |               |
|-------------------------------------|---------------|
| - IBM NetVista M41 PC, type 6790    | (black cover) |
| - Mouse                             | (black color) |
| - Keyboard, US English              | (black color) |
| - Power cable (Europe)              |               |
| - Serial cable, 1.5 m (Nullmodem)   |               |
| - 2 Patch cables RJ45 - RJ45, 1.5 m |               |
| - IBM installation instructions     |               |

## 2. Installation

### 2.1. Hardware

For installing the PC itself please observe also the original IBM installation instructions delivered with the PC.

- Select the AC input voltage range: 115 V or 230 V (default: 230 V)



- 1 Mouse connector
- 2 Parallel connector
- 3 Audio line in connector
- 4 Power connector
- 5 PCI Slots
- 6 AGB slot/ Monitor connector
- 7 Audio line out connector
- 8 Microphone connector
- 9 Ethernet connector
- 10 Serial connector
- 11 Serial connector
- 12 USB connector
- 13 Keyboard connector

#### Wiring when using the PC as PCR Preview Unit:

- Connect the serial cable (Nullmodem) to the COM1 ports of this PC and to the one of the PCR User Terminal.
- Connect the cable of the VGA monitor.
- If present, connect the serial cable of the touch screen monitor to the COM2 port.
- Connect the patch cable to the network. During setting-to-work a separate switch or hub should be used.
- Connect the power supply cable.

#### Wiring when using the PC as Console Compano S:

- Connect the cable of the VGA monitor.
- If present, connect the serial cable of the touch screen monitor to the COM2 port.
- Connect the patch cable to the network. During setting-to-work a separate switch or hub should be used.
- Connect the power supply cable.

### 2.2. Software

Depending on the usage different software packages have to be loaded into the PC.

Please refer to the Release Bulletins delivered with the respective system.

### 3. Faultfinding

#### 3.1. Fault Finding Strategy

Hardware defects of the computer are indicated:

- with a series of beep codes
- by BIOS error codes (POST error messages)

For further information, please refer to the IBM documentation delivered as PDF file on the CD PCR Compano Systems or use the IBM support via Internet.

- Hardware Maintenance Manual
- <http://www.pc.ibm.com>

#### 3.2. Beep Codes

Beep symptoms are short tones or a series of short tones separated by pauses (intervals without sound). See the following examples.

Beeps	Description
1-2-X	+ One beep + A pause (or break) + Two beeps + A pause (or break) + Any number of breaks
4	Four continuous beeps

##### Beep Symptom:

##### FRU/Action:

<b>1-1-3</b> CMOS read-write error	1. <b>Run Setup</b> 2. <b>System Board</b>
<b>1-2-2-3</b> ROM BIOS check error	1. <b>System Board</b>
<b>1-2-1</b> Programmable Interval Timer failed	1. <b>System Board</b>
<b>1-2-2</b> DMA Initialization failed	1. <b>System Board</b>
<b>1-2-3</b> DMA page register write/read failed	1. <b>System Board</b>
<b>1-2-4</b> RAM refresh verification failed	1. <b>DIMM</b> 2. <b>System Board</b>
<b>1-3-3-1</b> 1st 64K RAM test failed	1. <b>DIMM</b> 2. <b>System Board</b>
<b>1-3-2</b> 1st 64K RAM parity test failed	1. <b>DIMM</b> 2. <b>Processor</b> 3. <b>System Board</b>
<b>2-2-3-1</b> Interrupt vector loading test failed	1. <b>System Board</b>
<b>2-1-1</b> Secondary DMA register failed	1. <b>System Board</b>
<b>2-1-2</b> Primary DMA register failed	1. <b>System Board</b>
<b>2-1-3</b> Primary interrupt mask register failed	1. <b>System Board</b>
<b>2-1-4</b>	1. <b>System Board</b>

Secondary interrupt mask register failed

**2-2-1**

Interrupt vector loading failed

1. **System Board**

**1-3-1-3**

Keyboard controller failed

1. **System Board**
2. Keyboard

**2-2-3**

CMOS power failure and checksum checks failed

1. **Battery**
2. System Board

**2-2-4**

CMOS configuration info validation failed

1. **Battery**
2. System Board

**2-3-1**

Screen initialization failed

1. **Jumper on J28**
2. System Board

**2-3-2**

Screen memory failed

1. **System Board**

**2-3-3**

Screen retrace failed

1. **System Board**

**1-2**

Search for video ROM failed

1. **System Board**

All other beep code sequences

1. **System Board**

Continuous beep

1. **System Board**

Repeating short beeps

1. **Keyboard stuck key**
2. Keyboard Cable
3. System Board

### 3.3. POST Error Messages

Please refer to the Hardware Maintenance Manual of IBM, chapter Symptom-to-FRU Index.

The manual can be found on the CD PCR Compano Systems.

For better faultfinding it is recommended to switch-on the advanced POST in the BIOS.



## 4. Replacements

Please refer to the IBM documentation delivered as PDF file on the CD PCR Compano Systems.  
- Hardware Maintenance Manual

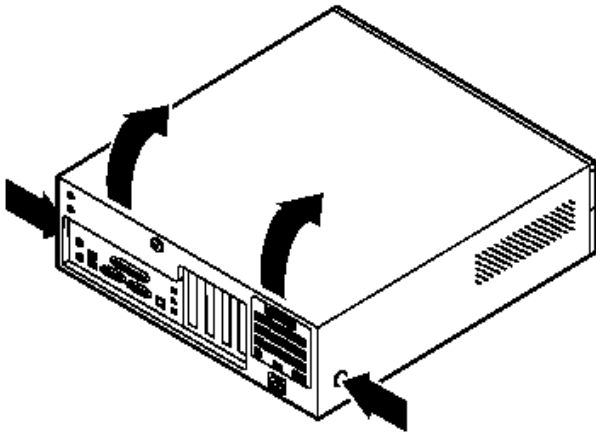
### **Before you begin:**

- Consider the safety information at the end of the Hardware Maintenance Manual.
- Shut down the operating system, remove any media, and turn off all attached devices and the computer.
- Unplug the power cords and all other cables.

### **Cover removal:**

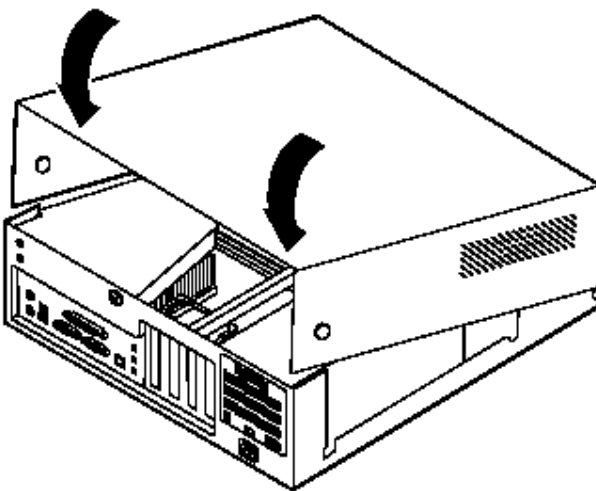
Firmly press the cover latch buttons on both sides. Pull up the back end of cover, and swing the cover towards the front of the computer.

**Note:** The front panel is integrated in the top cover.



### **Replacing the cover:**

Position the cover over the chassis and pivot the cover down over the computer until the cover snaps into place.



## 5. Programmings

Only the BIOS configuration is mentioned here.

For all other programmings refer to the specific Release Bulletins.

Two configuration menus can be reached during the initialization of the PC:

- Startup Device Menu, F12
- IBM Setup Utility (BIOS configuration), F1

**Note:** After installing the application software it is recommended to program the Hard Disk 0 permanently as the First Startup Device instead of the CD/DVD-ROM.

### 5.1. Startup Device Menu

Access: Press F12 during startup of the computer in the phase you will be asked for this selection.

The following list shows the programmed sequence of booting.

Select one of them in case the sequence shall be changed temporarily, e.g. for service purposes.

1. CD/DVD-ROM Drive
2. + Hard Drive
3. + Removable Devices
4. Network Boot

<Select Configuration> (→ BIOS configuration)

### 5.2. BIOS Configuration

Access: Press F1 during startup of the computer in the phase you will be asked for this selection.

The IBM Setup Utility shows the following selectable items:

- Main
- Devices
- Start
- Advanced
- Security
- Power
- Exit

The contents may vary depending on the version of the BIOS and the model of the PC.

Those items of the menu that allow system settings are described below:

#### (1) Main

System summary:

Product Data:

System UUID:

System Time:

(Enter local time)

System Date:

(Enter the date)

Language:

English (US)

**(2) Devices**

PS/2 Mouse:	Enabled	
Diskette Drive A:	1.44 MB 3½"	
Serial Port Setup:		
Serial Port A:	Enabled	
Base I/O address:	3F8	
Interrupt:	IRQ 4	
Serial Port B:	Enabled	
Base I/O address:	2F8	
Interrupt:	IRQ 3	
USB Setup:		
USB Support:	Enabled	
USB Device Support:	Enabled	
Parallel Port Setup:		
Parallel Port:	Disabled	
Video Setup:		
Active Video:	NVidia	
Select Active Video:	AGP	
Graphics Aperture:	64 Mb	
IDE Drives Setup:		
IDE Drive 0:		
Maximum Capacity:	40016 MB	(example only)
IDE Performance:	High Performance	
IDE Read Prefetch:	Disabled	
IDE Drive 1:	(not installed)	
IDE Drive 2:		
Type:	CD/DVD-ROM	
IDE Performance:	High Performance	
IDE Read Prefetch:	Disable	
IDE Drive 3:	(not installed)	
Audio Setup:		
Audio Support:	Enabled	
Network Setup:		
System Board Ethernet:	Enabled	
PXE Boot Agent:	Enabled	(only to see the MAC address)
PXE Base Code:	Disabled	
MAC Address	0002559D082D	(example only)

**(3) Startup**

Startup Sequence:		
Primary Startup Sequence:		
First Startup Device:	CD/DVD- ROM	(should be changed to Hard Drive 0 after installing the SW)
Second Startup Device:	Hard Disk 0	
Third Startup Device:	Removeable	
Fourth Startup Device:	Disabled	
Automatic Startup Sequence:	Disabled	
Error Startup Sequence:	Disabled	
Removeable Devices:	Diskette Drive	
Keyboard Numlock State:	On	
Keyboard Speed:	Fast	
Disketteless Operation:	Disabled	
Keyboardless Operation:	Disabled	
Power On Self Test:	Quick	
Power On Logos:	Enabled	
Option Keys Display:	Enabled	
Startup Device Menu Prompt:	Enabled	
Virus Detection:	Disabled	

#### (4) Advanced

PCI Parity:	Enabled	
Plug and Play Operating System:	No	
Legacy Free:	Disabled	
Processor 0 ID:	0F12	(example only)
Microcode Revision	05/23/2001	(example only)
Legacy Fan Control:	Normal	

#### (5) Security

Adapter ROM Security:	No
Security Profile by Device:	
IDE Controller:	Enabled
Diskette Drive Access:	Enabled
Diskette Write Protect:	Disabled
Password to request before booting:	
Removable Media Devices:	Not Required
Hard Disk Devices:	Not Required
Network Devices:	Not Required
Remote Administration:	
Remote Administration:	Enabled
Network Boot Integrity Services:	Disabled
Set Passwords:	
User Password:	
Set User Password:	Enter
Password Prompt:	Dual
Administrator Password:	
Set Administrator Password:	Enter
Require Admin. pass. when Flashing:	No
User password changeable by user:	No
Require User password on warm boot:	No

#### (6) Power

ACPI BIOS IRQ :	IRQ 9	
ACPI Standby Mode:	S3	
APM BIOS Mode:	Disabled	
Standby Timeout:	Disabled	
Hard Disk Timeout:	Disabled	
After Power Loss:	Last State	
Low Power Entry Activity Monitor:		(non-active)
Diskette, Serial and Parallel Ports:	Enabled	
IDE Hard Disks:	Enabled	
IDE CD/DVD ROM:	Disabled	
Low Power Exit Activity Monitor:		(non-active)
PS/2 Keyboard:	Enabled	
PS/2 Mouse:	Enabled	
Serial Port A:	Enabled	
Serial Port B:	Enabled	
LAN:	Enabled	
Automatic Power On:		(non-active)
Wake on LAN:	Disabled	
Serial Port A Ring Detect:	Disabled	
PCI Modem Ring Detect:	Disabled	
Wake Up on Alarm:	Disabled	
PCI Wake Up:	Disabled	